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AUG 04 2006

Remarks:

Reconsideration of the application, as amended herein, is respectfully requested.

Claims 1, 5, 7 - 11 and 22 - 28 are presently pending in the application. Claims 1, 9 and 10 have been amended. New claims 25 - 28 have been added.

Applicants would like to thank Examiner Prone for the courtesy shown to Applicants' representative during a telephone conference held on June 29, 2006, in which proposed claim amendments were discussed.

On page 2 of the above-identified Office Action, it was noted that claim 9 depended from canceled claim 6. Applicants have amended claim 9 to depend from claim 1.

In item 1 of the Office Action, claims 1, 5, 7, 8, 10 and 11 were rejected under 35 U.S.C. § 103(a) as allegedly being obvious over French Patent No. 470,543 to Bourdin ("BOURDIN") in view of U. S. Patent No. 4,014,234 to Spengler ("SPENGLER"). In item 2 of the Office Action, claims 9 and 22 - 24 were rejected under 35 U.S.C. § 103(a) as allegedly being obvious over BOURDIN and SPENGLER, and further in view of U. S. Patent No. 5,526,726 to Shore et al ("SHORE").

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Applicants respectfully traverse the above rejections, as applied to the amended claims.

More particularly, claim 1 has been amended to recite, among other limitations:

a control unit connected to and controlling said further drive to change the angular orientation of said pair of cylinders relative to the ribbon;

said control unit additionally connected to and controlling said one drive for controlling a rotational speed of said pair of cylinders such that a component of travel of a point of contact between said pair of cylinders in a direction of travel of the ribbon matches a speed of the ribbon for cutting the ribbon to produce a signature cut from the ribbon having a smooth, straight edge extending substantially perpendicular to the traveling direction of the ribbon on said travel path; and

said control unit changing the rotational speed of said pair of cylinders contemporaneously with changing the angular orientation of said pair of cylinders relative to the ribbon to adjust the cutting lengths of the ribbons. [emphasis added by Applicants]

Note that Applicants' independent claims 10 and 25 recite similar limitations.

The amendments to claims 1 and 10 are supported by the specification of the instant application, for example, by paragraphs [0013] - [0014] of the instant application, which state:

With the foregoing and other objects in view there is further provided, in accordance with the invention, a

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method for cutting ribbons. The method includes the step of transporting a ribbon between a pair of cylinders of a cutting unit disposed pivotally in a folder. The pair of cylinders includes a first cutting cylinder having a periphery with a cutting knife disposed helically about the periphery and a second cylinder. The cylinders are rotated such that a component of travel of a point of contact between the cylinders in a direction of travel of the ribbon matches a speed of the ribbon for cutting the ribbon such that a signature cut from the ribbon has a smooth, straight edge.

In accordance with a concomitant feature of the invention, there are the steps of increasing an angle between the cylinders and the ribbon for decreasing a cutting length of the signature, and adjusting a rotational speed of the cylinders for maintaining a straight cut of the signature; and decreasing the angle between the cylinders and the ribbon for increasing the cutting length of the signature, and adjusting the rotational speed of the cylinders for maintaining the straight cut of the signature.  
[emphasis added by Applicants]

See also, paragraphs [0022] - [0023] of the instant application, which states:

The cylinders 2, 3 are oriented at an angle .alpha. to the ribbon 1, and the cylinders 2, 3 are driven or rotated by drives 5, 5' at a speed proportional to a speed of the ribbon 1. As the cylinders rotate 2, 3, a point of contact (i.e. a point of cutting) between the cylinders 2, 3 travels across a width of the ribbon 1 and also in a direction of travel 7 of the ribbon 1 due to helical configuration of the cutting knife 4. In order to cut the ribbon 1 in a straight line, the proportionality constant of rotation of the cylinders 2, 3 is chosen such the component of travel of the point of contact in the direction of travel 7 of the ribbon 1 exactly matches the speed of the ribbon 1. The drives 5, 5' are in turn controlled by a control unit 6 that may be part of the cutting unit, a folder that incorporates the cutting unit or the printing system that incorporates the cutting unit. The drives 5, 5' may be motors, gears driven by a motor, a belt

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and pulley system, etc.. The control unit 6 is a microprocessor based control system.

When a different cut-to-length of the ribbon 1 is required by the printing system, the angular orientation  $\alpha$  of the cylinders 2, 3 relative to the ribbon 1 is changed. In addition, the proportionality constant of rotation of the cylinders 2, 3 is adjusted so that the component of travel of the point of contact in the direction of travel 7 of the ribbon 1 still matches the speed of the ribbon 1. [emphasis added by Applicants]

As such, among other limitations, Applicants' claims require a controller that contemporaneously changes both the angular orientation of a pair of cylinders relative to a ribbon and the rotational speed of the pair of cylinders such that a component of travel of a point of contact between the pair of cylinders in a direction of travel of the ribbon matches a speed of the ribbon for cutting the ribbon. Changing both the angular orientation and the rotational speed of the cylinders both changes the ribbon length (i.e., along the direction of travel of the ribbon) and produces a signature cut from the ribbon having a smooth, straight edge which is substantially perpendicular to the traveling direction of the ribbon along its travel path. The limitations of Applicants' claims emphasize the basic working principle of the instant invention, which is that, in order to obtain different length ribbons with smooth straight edges, both the angle between the cylinders and the ribbon and the rotational speed of the cylinders must be changed.

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The above limitations of Applicants' claims are neither taught, nor suggested by the SPENGLER and BOURDIN references, taken alone or in combination.

More particularly, as discussed during the Examiner Interview of June 29, 2006, the BOURDIN reference fails to teach or suggest making a straight and smooth cut perpendicular to the direction of travel of the web. Additionally, the SPENGLER reference fails to teach or suggest running the cylinders at a particular speed while making the cut. Further, neither BOURDIN, nor SPENGLER, teach or suggest adjusting both the angle of the cylinders and the rotational speed of the cylinders to adjust the cutting length of the ribbon and to maintain a straight, smooth cutting edge, substantially perpendicular to the direction of travel of the web. As such, Applicants' claims are believed to be patentable over the combination of BOURDIN and SPENGLER.

More particularly, the SPENGLER reference discloses using an intermittent drive for driving the cutting roller the use of which, incidentally, is only possible with sheet fed presses, but not with web fed presses, as claimed by Applicants. In SPENGLER, the length of the cut pieces is controlled by varying the duration of the drive of the cutting rollers.

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This is disclosed in SPENGLER, for example, in col. 1, lines  
64 - 68:

to provide a drive mechanism which will continuously  
advance the sheet material to be cut and which will  
intermittently drive the cutting roller, whereby the  
length of the cut pieces may be controlled by varying  
the duration of the drive of the cutting rollers;  
[emphasis added by Applicants]

As such, SPENGLER does not teach or suggest changing the speed  
of the cutting cylinders to vary the length of the cut pieces,  
as required by Applicants' claims. Rather, SPENGLER only  
discloses changing the duration of the drive to vary the  
length of the cut pieces. BOURDIN does not cure this  
deficiency of SPENGLER. As such, Applicants' claims are  
believed to be patentable over SPENGLER and BOURDIN, alone or  
in combination.

Further, SPENGLER discloses varying the angular position of  
the rollers (i.e., the pivotal frame) in order to obtain  
cutting edges which deviate from an angle of 90°. See, for  
example, col. 2 of SPENGLER, lines 1 - 5, which states:

to provide means for varying the angular position of  
the rollers, especially the cutting roller relative to  
the feed advance direction, whereby it would be  
possible to cut pieces along lines which extend at an  
angle relative to the feed advance direction deviating  
from 90°; [emphasis added by Applicants]

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Thus, SPENGLER fails to teach or suggest, and actually teaches away from, Applicants' claimed invention of varying the signature lengths by changing the angle of orientation of the cylinders relative to the ribbon, contemporaneously with increasing or decreasing the speed of the cutting rollers in order to maintain the perpendicular cutting edges of the ribbon.

Further, contrary to Applicants' claimed invention, BOURDIN also fails to teach or suggest driving the cutting rollers (C and D of BOURDIN) at a speed which is different from the speed of the web (A of BOURDIN). As such, even a combination of BOURDIN and SPENGLER would not teach or suggest a cutting device or method which, at a given web speed, allows for a variation of the cutting length. Neither BOURDIN, nor SPENGLER teach or suggest a controller that permits an adjustment of the speed of the cutting rollers relative to the web speed. It even appears that, in the references, the cutting rollers are not driven by a variable speed gear, so that there is a fixed relationship between the speed of the rollers and the speed of the web.

As such, the combination of BOURDIN and SPENGLER fails to teach or suggest, among other limitations, changing the speed

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of the rollers in order to maintain a perpendicular cutting edge of the signatures, as required by Applicants' claims.

It is accordingly believed that none of the references, whether taken alone or in any combination, teach or suggest the features of claims 1, 10 and 25. Claims 1, 10 and 25 are, therefore, believed to be patentable over the art. The dependent claims are believed to be patentable as well because they all are ultimately dependent on claims 1, 10 or 25.

In view of the foregoing, reconsideration and allowance of claims 1, 5, 7 - 11 and 23 - 28 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate receiving a telephone call so that, if possible, patentable language can be worked out.

Additionally, please consider the present as a petition for a one (1) month extension of time, and please provide a one (1) month extension of time, to and including, August 10, 2006 to respond to the present Office Action.



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The extension fee for response within a period of one (1) month pursuant to Section 1.136(a) in the amount of \$120.00 in accordance with Section 1.17 is enclosed herewith.

The present amendment is additionally being filed simultaneously with a Request for Continued Examination, and its associated fee. Please provide any additional extensions of time that may be necessary and charge any other fees that might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner, Greenberg, Stemmer, L.L.P., P.A., No. 12-1099.

Respectfully submitted,



For Applicants

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August 4, 2006

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